

SCHISTOSOMIASIS MALAYENSIS-LIKE INFECTION AMONG THE PENAN AND OTHER INTERIOR TRIBES (ORANG ULU) IN UPPER REJANG RIVER BASIN SARAWAK MALAYSIA

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Abstract. A serosurvey of various indigenous interior tribes (Orang Ulu) in upper Rejang River Basin Sarawak Malaysia, the site of a multibillion Ringgit hydroelectric power project, found 6.8% of the individual surveyed were seropositive for schistosomiasis, as determined by ELISA method using the soluble egg antigen of *Schistosoma malayensis* Baling strain. In all age group, the seroprevalence rate is higher (9.5%) in males than in females (4.5%) except for the 31-40 age group. Seroprevalence of schistosomiasis was found to increase with age with the above 60 age group having the highest rate followed by the 31-40 age group. Seroprevalence rate among the tribes ranges from 4.1% among the Penan to 11.6% among the Kajang. There was no seroevidence of schistosomiasis among the Ukits. A snail survey found four snail species including *Brotia* species, the intermediate host of the lung fluke *Paragonimus westermani*, however no schistosome snail host was identified. Although schistosomiasis malayensis-like infection may be endemic in the area, its public health significance remains undetermined.

INTRODUCTION

Schistosomiasis, caused by various anthropophilic *Schistosoma* species, is estimated to cause infection in more than 200 million people in rural agricultural and peri-urban areas in tropical and subtropical developing countries particularly in Africa, South America and China (Iarotski and Davis, 1981; WHO, 1996; CUSRG, 1998). In South East Asia *S. japonicum* is prevalent in southern Philippines and central Sulawesi Indonesia, whereas *S. mekongi* is endemic in the Mekong Delta (Sornmani, 1976; Harinasuta, 1984). In Malaysia *S. malayensis* were detected among the Orang Asli in West Malaysia (Murugasu and Por, 1973; Murugasu *et al*, 1978; Greer *et al*, 1984; Anuar *et al*, 1984; Chandra and Pathmanathan, 1987), while evidence of *S. japonicum* was found in a monkey (Kuntz, 1978) and in liver and rectal biopsies of immigrants from Philippines (Kan *et al*, 1978). In Sarawak, environmental impact assessment (EIA) survey in upper Lupar River and upper Rejang River found eight individuals

who were active schistosome eggs excretors (IMR/SESCO, 1992). A serosurvey found 16.2% were seropositive for schistosomiasis, however the snail host could not be identified. In this paper we report seroevidence of schistosomiasis malayensis-like infection among the Penan and other interior tribes (Orang Ulu) in upper Rejang River Basin.

MATERIALS AND METHODS

Study area

The upper Rejang River basin was selected for this study because this area is undergoing large scale environmental changes linked to a multibillion Ringgit hydroelectric project at Bakun (Fig 1). Large scale water resources development is associated with increased risk of intestinal schistosomiasis (WHO, 1996). An EIA report noted that schistosomiasis is endemic in the area (IMR/SESCO, 1992), thus it was necessary to assess whether the infection is of potential public health significant. This is